

EXHIBIT 14

Vohra, Yogesh K.

July 31, 2020

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IN THE UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

CARNEGIE INSTITUTION OF
WASHINGTON AND M7D CORPORATION,

Plaintiffs,

vs. CASE NO: 20-CV-189 (JSR)

PURE GROWN DIAMONDS, INC., and
IIA TECHNOLOGIES PTE. LTD. d/b/a
IIA TECHNOLOGIES,

Defendants.

CARNEGIE INSTITUTION OF
WASHINGTON and M7D CORPORATION,

Plaintiffs,

vs. CASE NO: 20-CV-200 (JSR)

FENIX DIAMONDS, LLC,

Defendants.

The video deposition of YOGESH K. VOHRA, Ph.D.,
taken remotely via Zoom videoconference with the
witness located in Washington, DC, on July 31,
2020, commencing at approximately 10:00 a.m. ET

Reported by:

L. ALAN PEACOCK, RDR, CRC, CCR

JOB NO. 48951

Henderson Legal Services, Inc.

202-220-4158

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1 THE VIDEOGRAPHER: All right. And will 09:09:12
2 the court reporter now please swear in the 09:09:12
3 witness. 09:09:12

4 MR. AIRAN: There are more appearances. 09:09:12
5 This is David Airan on from Leydig, Voit & 09:09:12
6 Mayer on behalf of Fenix Diamonds, LLC, in 09:09:14
7 the 200 case. And with me is Max Snow, also of 09:09:17
8 Leydig Voit & Mayer, also representing Fenix 09:09:21
9 Diamonds, LLC. 09:09:25

10 MR. MELLON: Although you can't see me, 09:09:27
11 this is David Mellon, M-E-L-L-O-N, counsel for 09:09:27
12 Dr. Vohra. 09:09:32

13 THE VIDEOGRAPHER: Okay. Now, will the 09:09:40
14 court reporter please swear in the witness. 09:09:41

15 THE COURT REPORTER: My name is Alan 09:09:43
16 Peacock with Henderson Legal Services. I am an 09:09:43
17 Alabama Certified Court Reporter. My license 09:09:43
18 number is AL013, and my license is available 09:09:43
19 for inspection. 09:09:43

20 At this time, do all parties agree to 09:09:43
21 waive any objection now or in the future to the 09:09:43
22 reporter swearing in the witness remotely? 09:09:43

23 Please so indicate. 09:09:43

24 MR. LONG: No objection here. 09:09:43

25 MR. AIRAN: No objection on behalf of 09:09:43

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1 Fenix. 09:09:43

2 THE COURT REPORTER: Thank you. 09:09:43

3 I would ask the witness to please raise 09:09:43

4 your right hand and face the camera. 09:09:43

5 YOGESH K. VOHRA, PH.D., 09:09:43

6 the witness, having been first duly sworn 09:09:43

7 to speak the truth, the whole truth, and nothing but 09:09:43

8 the truth, testified as follows: 09:09:43

9 EXAMINATION 09:09:43

10 BY MR. LONG: 09:10:32

11 Q. So let me first start, Dr. Vohra, by 09:10:33

12 saying thank you for being here today. There are 09:10:36

13 probably any number of things you would rather be 09:10:39

14 doing today; so for what it's worth, we appreciate 09:10:41

15 your time. 09:10:43

16 Is this your first deposition? 09:10:44

17 **A. That's correct.** 09:10:47

18 Q. Okay. So I just want to run through a few 09:10:49

19 guidelines to make sure everything goes smoothly. I 09:10:52

20 think that the court reporter has already mentioned 09:10:55

21 it's best if we don't talk over one another so that 09:10:57

22 the court reporter can take down our conversation 09:11:00

23 and there's no cross talk. Is that okay? 09:11:02

24 **A. That's fine.** 09:11:07

25 Q. From time to time, I probably will ask a 09:11:09

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1 degree of polycrystallinity mean? 02:23:08

2 A. I think this is a very general statement. 02:23:20

3 What it really means is that you have some 02:23:23

4 appearance of polycrystalline growth at the edges, 02:23:32

5 which can be a machine or laser cut to remove. 02:23:34

6 Q. Okay. 02:23:42

7 A. I think that's what it really means. 02:23:43

8 Because X-ray diffraction which is doing the rocking 02:23:48

9 curve can also measure the polycrystalline 02:23:53

10 diffraction pattern. And if you get your single, 02:23:54

11 that means you have some polycrystallinity in the 02:23:57

12 sample. 02:24:01

13 Q. Okay. Makes sense. Now, we can go to 02:24:06

14 Exhibit 10, which is that Dr. Yan paper you brought 02:24:09

15 up earlier. 02:24:15

16 Do you see the portion I highlighted here? 02:24:45

17 A. Yes. 02:24:55

18 Q. Can you explain what that's referring to? 02:24:57

19 A. I'll have to look at these Reference 9 and 02:25:37

20 13. 02:25:40

21 Q. I don't know if they're Attached as 02:25:47

22 exhibits, 9 and 13. No, they're not. But that's 02:25:50

23 okay. If you don't remember that's okay. 02:25:58

24 A. The other thing is that 9 and 13, I really 02:26:00

25 cannot say what are the indications of this. 02:26:03

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1 Q. Okay. What do you think would happen, 02:26:09

2 though -- if you're able to answer this without 02:26:15

3 looking at these references -- what would you expect 02:26:17

4 to happen if plasma concentrated at tips and edges? 02:26:21

5 A. Well, if we have a plasma concentration at 02:26:32

6 tips and edges, you get graphite growth at those 02:26:37

7 edges. 02:26:41

8 Q. Would that mean that the tips and edges 02:26:42

9 would be much hotter than the center? 02:26:44

10 A. Yes. 02:26:47

11 Q. Okay. And by "much hotter," much hotter 02:26:50

12 than 20 degrees Celsius? 02:26:53

13 A. If you have graphite nucleation at the 02:26:58

14 edges, you will get a lot of temperature range. 02:27:01

15 Q. Larger than 20 degrees Celsius? 02:27:06

16 A. Oh, yes. 02:27:09

17 Q. Is that what you're saying? 02:27:09

18 A. Yes. 02:27:11

19 Q. Okay. So now here I want to go to Fig. 1. 02:27:12

20 And I know this isn't -- are you familiar with this 02:27:20

21 picture? 02:27:29

22 A. Yes. 02:27:30

23 Q. Okay. So it's kind of a blurry picture. 02:27:33

24 And I was hoping you could explain what is being 02:27:41

25 shown on the right side and on the bottom. And, 02:27:44

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1 here, let me show you the caption first. The 02:27:52

2 caption is right here. 02:27:56

3 A. Yes. So basically it is a commercial 02:28:02

4 yellow diamond plate on the left. And we put it in 02:28:06

5 the plasma CVD reactor. And then it is enlarged 02:28:11

6 after the growth experiment. And the insert was at 02:28:18

7 the bottom is showing that you are beginning to form 02:28:22

8 some kind of a (111) edge. 02:28:26

9 So you start out with sharp phases, six 02:28:31

10 phases of (100) diamond. And after the growth, you 02:28:33

11 are beginning to see some formation of (111) diamond 02:28:40

12 plate. 02:28:45

13 Q. So are you referring to that little thing 02:28:47

14 that that I -- 02:28:49

15 A. Yeah. 02:28:50

16 Q. So is that kind of like a lump on the 02:28:51

17 corner? 02:28:55

18 A. Yes. So I think that the main point of 02:28:56

19 showing this is that, even though you start with a 02:28:59

20 cube, after the growth experiment, it's going to 02:29:01

21 become what is known as octahedron shaped, the 02:29:06

22 diamond. And you have (100) and (111) phases. So 02:29:11

23 basically it's showing the early signs of, you know, 02:29:16

24 an octahedron shape. 02:29:19

25 Q. Okay. So let me -- I can't show you these 02:29:24

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1 holder? 02:46:54

2 **A. Yeah. That's what it would imply.** 02:46:58

3 Q. Okay. Sure. Now, I want to go to -- oh, 02:47:03

4 let me ask you a question. Is there a difference in 02:47:22

5 surface morphology between single-crystal diamond 02:47:25

6 and polycrystalline diamond? 02:47:29

7 **A. Yes.** 02:47:36

8 Q. Okay. So now I'm going to go to the same 02:47:40

9 document. I'm going to go to Paragraph 152. It 02:47:45

10 talks about temperature gradient and heat-sinking 02:47:57

11 holder. 02:48:08

12 Do you see that? 02:48:15

13 **A. Yes.** 02:48:16

14 Q. Okay. Now, it lists a few temperature 02:48:22

15 gradients across the growth surface. It says less 02:48:24

16 than 100, less than 50, 40, 30, 20, 10. 02:48:27

17 **A. Yes.** 02:48:34

18 Q. Okay. What would a diamond with a 02:48:38

19 temperature gradient across the growth surface of 02:48:44

20 100 degrees Celsius look like compared to one with 02:48:47

21 10 degrees Celsius? 02:48:54

22 **A. I really don't recall those details.** 02:49:00

23 Q. Okay. So do you remember if you grew a 02:49:07

24 diamond with a temperature gradient of 100 degrees 02:49:12

25 Celsius? 02:49:16

25 wanted to achieve a temperature gradient across the 02:51:23

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1 growth surface of less than 20 degrees or 10 degrees 02:51:28
2 or even -- let's say less than 30 degrees. What do 02:51:31
3 you think you would require in order to accomplish 02:51:43
4 that? 02:51:46

5 **A. I think it would be the substrate holder 02:51:58**
6 **design. 02:52:01**

7 Q. The one that contacts the diamonds on 02:52:03
8 their sides? 02:52:05

9 **A. Correct. Yes. 02:52:06**

10 **(DEPOSITION EXHIBIT 103 WAS MARKED FOR 02:52:06**
11 **IDENTIFICATION.) 02:52:06**

12 BY MR. SNOW: 02:52:08

13 Q. Okay. So now I want to go Exhibit 103. 02:52:08

14 Dr. Vohra, is this -- are you an author of 02:52:37
15 this paper? 02:52:40

16 **A. Yes, I am. 02:52:42**

17 Q. Okay. And is Chih-shiue Yan, is he a 02:52:45
18 co-inventor of the 078 patent? 02:52:51

19 **A. Yes, he is. 02:52:56**

20 Q. And did you write this paper together? 02:52:58

21 **A. Yes, we did. 02:53:02**

22 Q. Okay. So let's go down. And I know you 02:53:06
23 have kind of seen maybe a little bit lower-quality 02:53:13
24 versions of these pictures earlier today because I 02:53:18
25 think that some of these were in the Yan 02:53:21

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1 dissertation. But I wanted to talk about some of 02:53:27

2 these pictures, if that's okay with you. 02:53:29

3 **A. Okay.** 02:53:32

4 Q. So, first, I want us to look at this 02:53:38

5 diamond, DRUK1. 02:53:46

6 **A. Okay.** 02:53:48

7 Q. So is this area in the center all one big 02:53:50

8 crystal? 02:54:02

9 **A. It is.** 02:54:03

10 Q. Okay. What's the black stuff around the 02:54:05

11 edges? 02:54:09

12 **A. Most likely some graphite nucleation.** 02:54:13

13 Q. Okay. Is this -- in your experience, is 02:54:18

14 this kind of a pretty good surface morphology or a 02:54:29

15 poor one? 02:54:35

16 **A. I would say if you go up, DRUK2, that's a 02:54:37**

17 **better one.** 02:54:41

18 Q. This one? 02:54:46

19 **A. Yes. Because you can see, you are 02:54:46**

20 **beginning to develop -- remember, this is a circular 02:54:49**

21 **plate, so you have the upper edges which are (100) 02:54:53**

22 **surface on the side. So this one has a much better 02:54:57**

23 **morphology than the other one.** 02:55:03

24 Q. Okay. 02:55:05

25 **A. So out all of these pictures, this is the 02:55:06**